

## ABSTRACT

The present provides methods and compositions that enable effective delivery of nucleic acids to desired cells, including to a solid organ such as a mammalian heart. The methods and compositions enable effective gene transfer and subsequent expression to a majority of cells throughout a solid organ such as the heart. Methods and compositions of the invention preferably provide enhanced vascular permeability that enables increased gene transfer to targeted cells, but without significant degradation or injury to endothelial cell layers. Global delivery of nucleic acid to an intact heart has been achieved with as little as 2 minutes of intracoronary exposure to the administered nucleic acid.